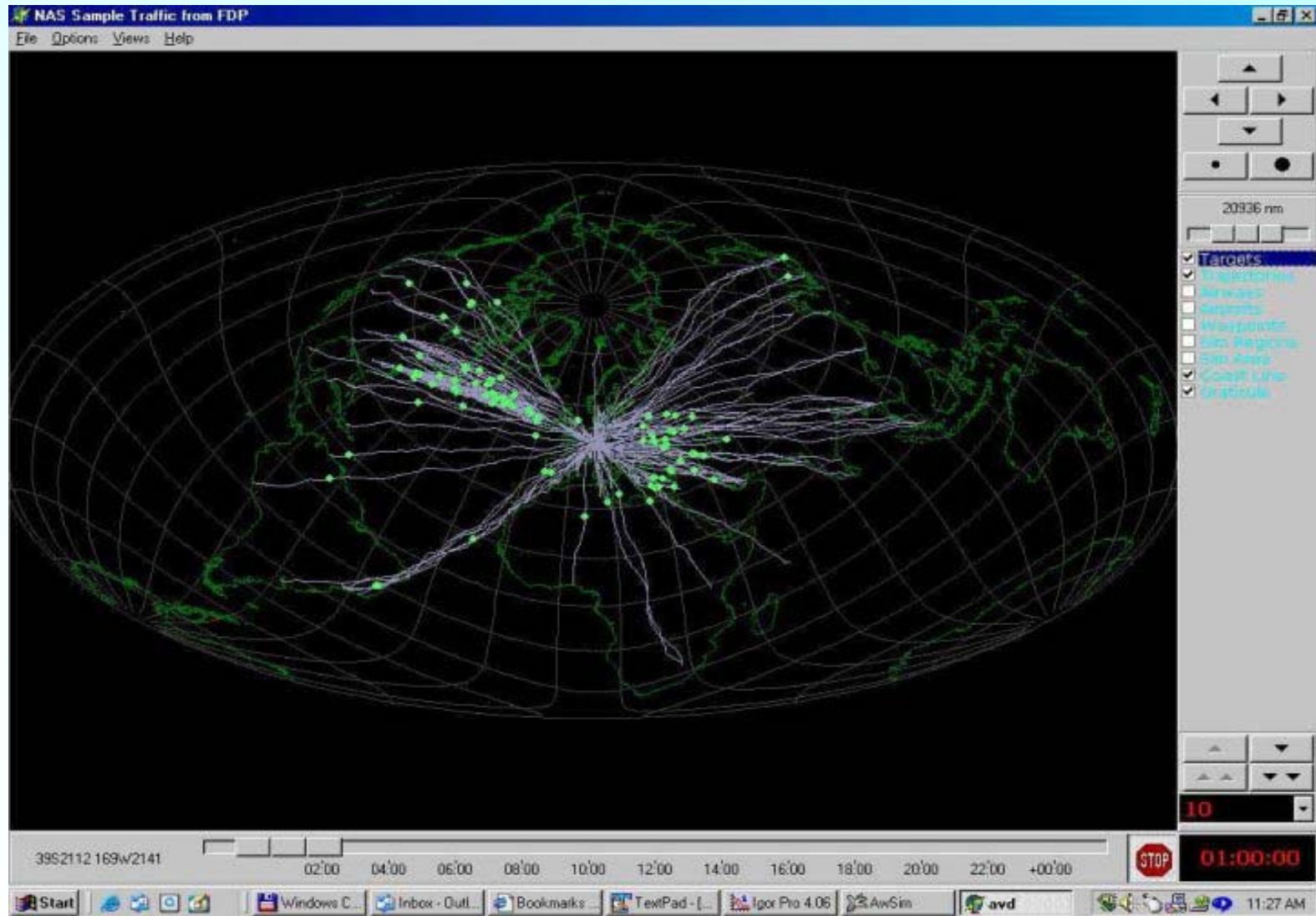


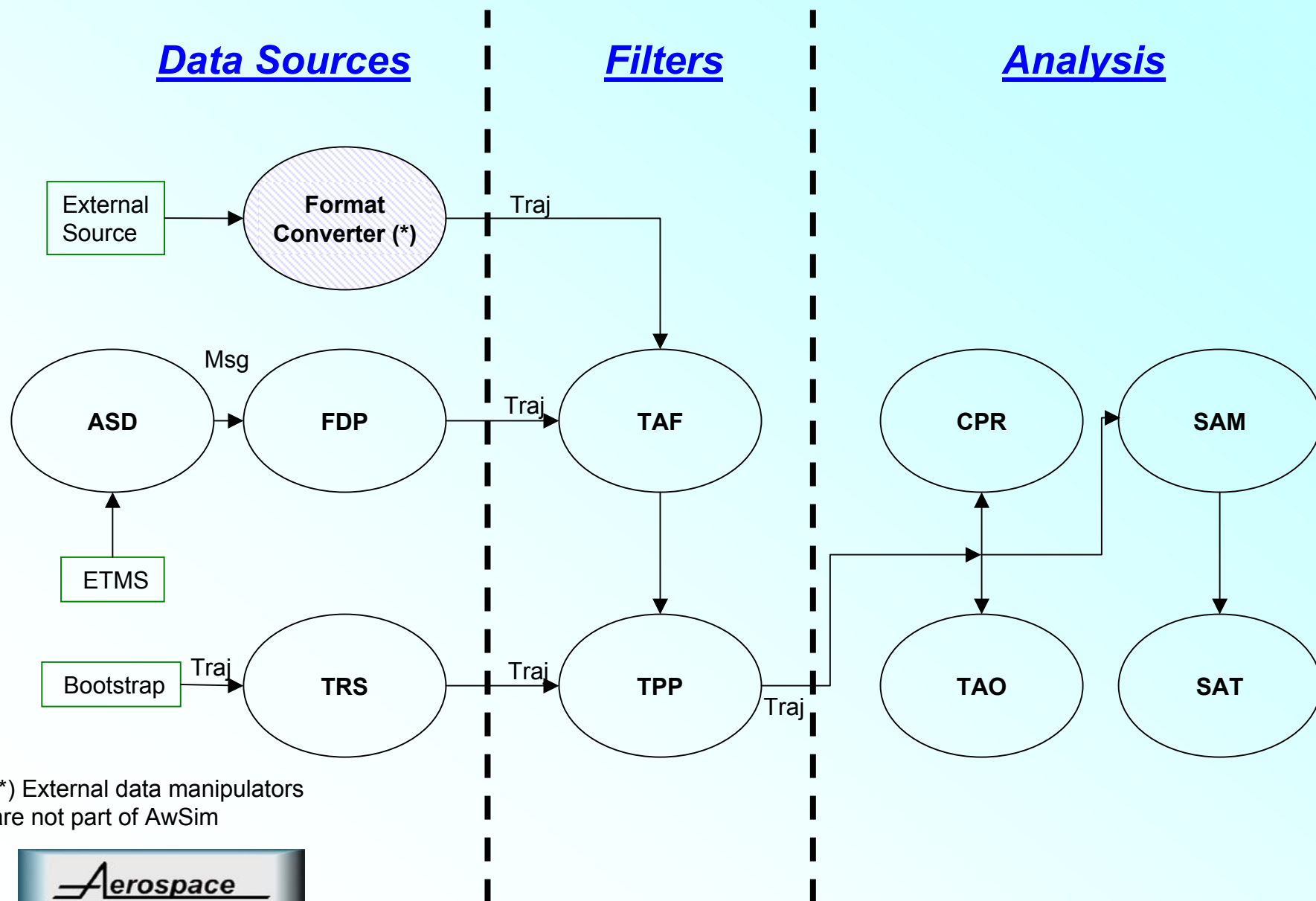
Purpose



Purpose

- Macroscopic emulation/simulation of the airspace as a whole
- Quantify sensitivity of the airspace capacity/efficiency to changes in
 - Policy/Procedures
 - Technology
 - Demographics
- Provide a framework for connection to other models
- Provide a robust rapid prototyping environment

Architecture



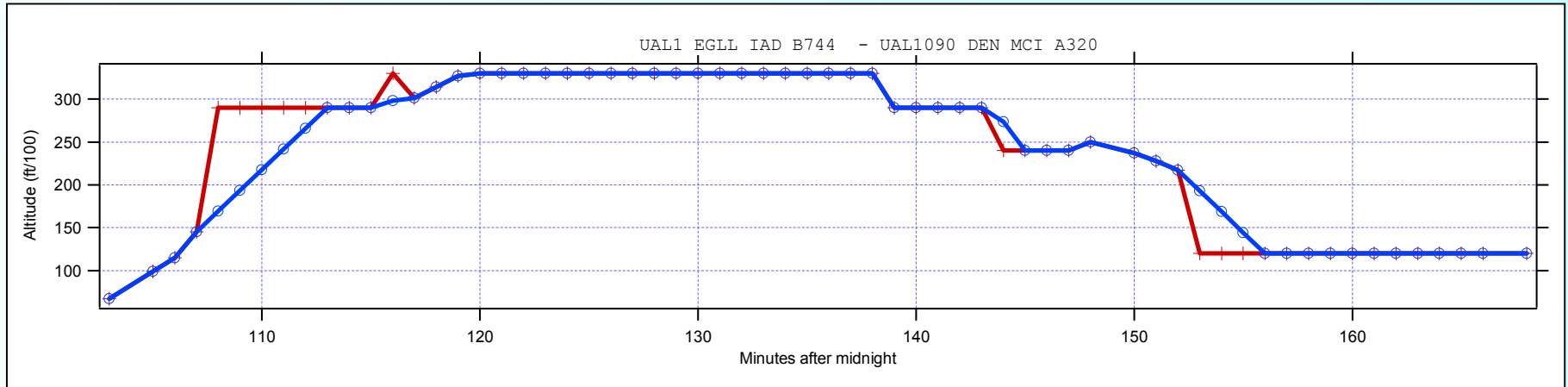
(*) External data manipulators are not part of AwSim

Excess Distance Vs. Traffic Load

- Use ETMS data as a baseline
- Filter data for altitude spikes, lateral deviations and discontinuous routes
- Use numbers of conflicts as proxy for “goodness” of data
- Calculate excess distance
 - Defined as: En Route miles – De-conflicted direct Miles
- Use bootstrap method to increase traffic volumes incrementally

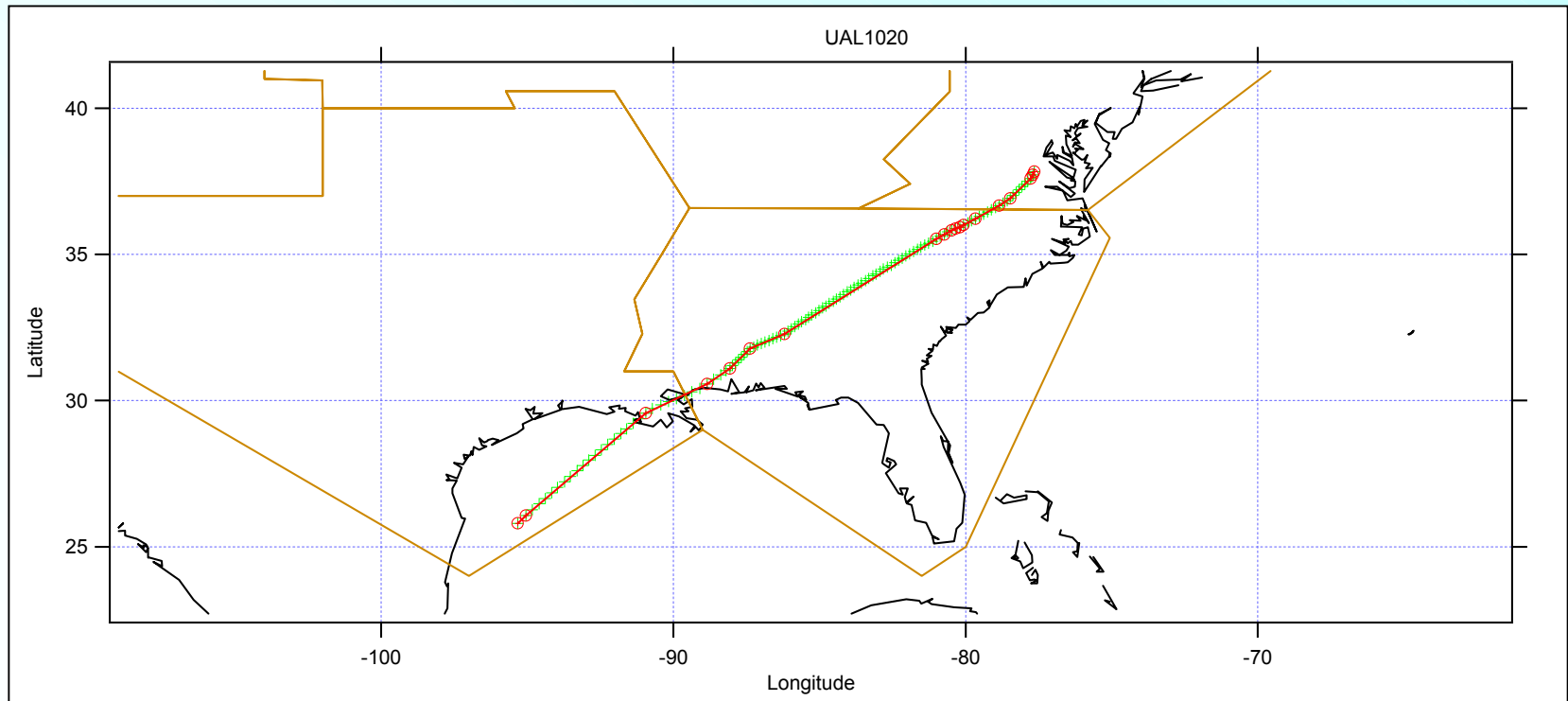
Ongoing Studies

Altitude Profile Filtering



Ongoing Studies

Trajectory Simplification



Ongoing Studies

En Route Benefits



- NASPAC used to generate traffic scenarios for years 2010-2020 in terms of flight events
- Flight events translated into AwSim 4d trajectories
- AwSim Metrics and Conflict Prediction used for analysis of NASPAC data in terms of
 - Controller workload
 - Sector load
 - Numbers of conflicts
 - Depth of conflicts

